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Media Relations

April 9, 2014

UNH Professor Tapped to Investigate Washington State Landslide

DURHAM, N.H. – A University of New Hampshire civil engineering professor is part of a team that will collect information and document the effects of the March 22, 2014, Oso landslide in Snohomish County, Washington. Jean Benoît, professor of civil engineering at UNH, and colleagues on the Geotechnical Extreme Events Reconnaissance (GEER) Association, supported by the National Science Foundation, will document the effects of the landslide on the built and natural environments.

Benoît and collaborators will investigate the geotechnical impacts of the landslide and resulting debris flow; better understanding of what happened leading to the collapse of the slope will help communities and infrastructure systems be designed for greater resiliency and enhanced public safety.

“Observations of actual events are particularly important in the field of geo-engineering, because it is difficult to replicate in the laboratory soil deposits built by nature over thousands of years and sediment-water slurries that include large boulders,” says Benoît. “We need to better understand the mechanisms associated with debris flows. They are potentially so devastating and often unexpected.” Benoît’s work on landslides includes development of “smart rocks” to better understand the behavior of debris flows.

Extreme events engineering is an experience-driven field where immediately following the occurrence of a geotechnical event (such as an earthquake, tsunami, hurricane, landslide, or flood), perishable data that can be used to advance understanding is systematically collected. Detailed mapping and surveying of damaged areas provides the data for well-documented case histories that drive the development of many of the design procedures used by engineers.

The investigation is being coordinated by Jeffrey Keaton, principal engineering geologist at AMEC Americas, and Joseph Wartman of the University of Washington; also participating are John deLaChapelle of Golder Associates, David Montgomery of the University of Washington, and Scott Anderson of the Federal Highway Administration. These geologists and engineers will benefit from work performed by the Washington State Department of Natural Resources (DNR), Washington State Department of Transportation (WSDOT), U.S. Geological Survey (USGS), U.S. Department of Agriculture – Forest
Service, and others.

The Oso landslide became a rapidly moving, unchannelized debris flow that spread out as it traveled about ½ mile, damming the North Fork of the Stillaguamish River, destroying and carrying away about 50 homes, and burying about 1 mile of State Highway 530. The confirmed death toll (April 9, 2014) is 35. Precipitation in March leading up to the Oso landslide was nearly twice the average amount.

After the Oso landslide field investigation is complete, observations and findings will be posted on the GEER website. Images from the various investigators also will be posted on the website and visible through Google Earth. More information is at http://www.geerassociation.org/.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,300 undergraduate and 2,200 graduate students.

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